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10/018,219	02/26/2002	Hector Fillipus Alexander Von Drentham Susman	CNF-002	3668

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H T Than  
3201 New Mexico Avenue NW Suite 350  
Washington, DC 20016

EXAMINER
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COLLINS, GIOVANNA M

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/018,219

Applicant(s)

SUSMAN, HECTOR FILLIPUS  
ALEXANDER VON D

Examiner

Giovanna M. Collins

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-73 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

The preliminary amend filed December 18,2001 has been entered.

#### *Specification*

1. The disclosure is objected to because of the following informalities: The reference number 10 is used to describe both the chamber and the pump.

Appropriate correction is required.

#### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the one or more backup valves at the inlet and outlet, more than one way valves on the inlet and outer, a plurality of pumps operatively connected to one another, pumps operating out of phase with one another, two pumps having two chambers each, two pumps having four chambers each and the means for cleaning the filter being a blade, knife or scraper with a serrated edge must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Figure 1 is objected to because when a portion of a view is enlarged for magnification purposes, the view and the enlarged view must each be labeled as separate views.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

3. Claim 31 is objected to because it recites the limitation "the rotatable member" in line 3. There is insufficient antecedent basis for this limitation in the claim as this limitation has not been previously recited in claim 31 or claims 1,3 10-12 and 30 from which claim 31 depends.

Claim 53 is objected to because it recites " A plurality of pumps as claimed in claim 48", however, claim 48 does not recite a plurality of pumps. It appears that the Applicant intended to recited in line 1 of claim 53 - - A plurality of pumps as claimed in claim 49 - - instead of "A plurality of pumps as claimed in claim 48".

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4,6,8-16,26-32, 38-43,45,49,50 and 59-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Deming ('985).

Deming discloses (see Figs. 1-9) a pump (2) having a chamber (21) having a volume, an inlet and outlet to the chamber and means (14,16) for varying the volume of the chamber.

Referring to claim 2, Deming discloses the pump (2) is to be used downhole (see Fig. 1).

Referring to claim 3, Deming discloses the means for varying the volume is by relative rotation of first (14) and second (16) bodies of the pump.

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Referring to claim 4, Deming discloses the second body (16) is provided within the first body (14).

Referring to claim 6, Deming discloses the first and second bodies (14,16) are substantially eccentric relative to one another.

Referring to claim 8, Deming disclose the chamber (21) is provided substantially longitudinally within the second body.

Referring to claim 9, Deming disclose the first and second bodies (14,16) are of an elongate form.

Referring to claim 10, Deming discloses the second body (16) comprises a rotor.

Referring to claim 11, Deming disclose the first body (14) comprises a stator.

Referring to claim 12, Deming discloses at least one piston (23) supported by the second body and biased by means (27) towards the first body.

Referring to claim 13, Deming discloses a first end of each piston (23) communicates with the chamber (21) and a second end is urged by biasing means (27) into contact with an inner surface of the stator.

Referring to claim 14, Deming discloses relative rotation of the first and second bodies (14,16) causes movement of the pistons to vary the volume of the chamber.

Referring to claim 15, Deming discloses the first body (14) has an elliptical or oval internal bore (see page 2, at line 41).

Referring to claim 16, Deming discloses the second body (16) has a substantially cylindrical outer surface.

Referring to claim 26, Deming discloses at least one pair of pistons (23) supported by the second body and radially opposing one another.

Referring to claim 27, Deming discloses the at least one pair of pistons (23) is provided substantially within the second body (16).

Referring to claim 28, Deming discloses a plurality of pairs of pistons (23), each pair longitudinally spaced from an adjacent pair along the second body.

Referring to claim 29, Deming discloses each piston includes a rotatable member (25) free to rotate at least along a longitudinal axis with respect to the rotor.

Referring to claim 30, Deming discloses each piston includes a piston member (23).

Referring to claim 31, Deming discloses the piston member includes a concave portion (at 26) to receive a portion of the rotatable member.

Referring to claim 32, Deming discloses each rotatable member can be in the form of a sphere (see page 2, line 75-79).

Referring to claim 38, Deming discloses the piston members (23) are made of metal.

Referring to claim 39, Deming discloses the piston (23) is polygonal.

Referring to claim 40, Deming discloses the rotatable member (25) is made of metal.

Referring to claim 41, Deming discloses the rotatable member is spherical or cylindrical (see page 2, line 75-79).

Referring to claim 42, Deming discloses the biasing means (27) are made from metal.

Referring to claim 43, Deming discloses the rotor (16) is provided with at least two piston apertures (at 24), which are disposed substantially opposite one another, each having a piston (23).

Referring to claim 45, Deming discloses a plurality of pistons (23) and respective biasing means (27), where each piston and biasing means work individually in series or in parallel with one another.

Referring to claim 49, Deming discloses the pumps are arranged to be operatively connected to one another (see Fig. 1 at 2 and 4).

Referring to claim 50, Deming discloses the pumps operate substantially in phase with one another and are not separated by a one-way valve (see Fig. 1 at 2 and 4).

Referring to claim 59, Deming discloses a well completion including at least one pump (2) having a chamber (21) having a volume, an inlet and outlet to the chamber and means for varying the volume of the chamber (14 and 16).

Referring to claim 60, Deming discloses a method of artificial lift within an oil gas well comprising the steps of lowering a pump to a desired position, the pump (2) having a chamber (21) having a volume, an inlet and outlet to the chamber and means for varying the volume of the chamber (14 and 16), driving the pump so varying the volume of the chamber pumps well fluids downstream through a tubing string.

5. Claims 1,3,5,10,11,12,26,30-31,33,44 and 46-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Gordon ('126).

Gordon discloses (see Figs. 1-4) a pump having a chamber having a volume, an inlet and outlet to the chamber and means (32,48) for varying the volume of the chamber.

Referring to claim 3, Gordon discloses the means for varying the volume is by relative rotation of first (48) and second (32) bodies of the pump.

Referring to claim 5, Gordon discloses the first and second bodies (48,32) are substantially concentric relative to one another.

Referring to claim 10, Gordon discloses the second body (32) comprises a rotor.

Referring to claim 11, Gordon discloses the first body (48) comprises a stator.

Referring to claim 12, Gordon discloses at least one piston (32) supported by the second body and biased by means (46) towards the first body.

Referring to claim 26, Gordon discloses at least one pair of pistons (40) supported by the second body and radially opposing one another.

Referring to claim 30, Gordon discloses each piston includes a piston member (40).

Referring to claim 31, Gordon discloses the piston member includes a concave portion (at 42) to receive a portion of the rotatable member (44).

Referring to claim 33, Gordon discloses each rotatable member (44) is in the form of a cylinder.

Referring to claim 44, Gordon discloses each piston has a slot (104) allowing fluid to flow through the piston (40) from the chamber to assist in lubricating the surface of the piston.

Referring to claim 46, Gordon discloses the rotor (32) is provided with a plurality of pistons (40) arranged in pairs, each aperture of each pair being substantially opposite to the other.

Referring to claim 47, Gordon discloses on biasing means is used for each piston of a pair by traversing the chamber but cutting off fluid flow through chamber.



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6. Claims 1, 3, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Wycliffe ('360).

Wycliffe discloses (see Fig. 1) a pump having a chamber having a volume, an inlet (8) and outlet (9) to the chamber and means (1,2) for varying the volume of the chamber.

Referring to claim 3, Wycliffe discloses the means for varying the volume is by relative rotation of first (2) and second (1) bodies of the pump.

Referring to claim 7, Wycliffe discloses the chamber is provided within the second body (1).

7. Claims 1,3,4,6, 17 and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Dusevoir ('732).

Dusevoir discloses (see Figs. 1-4) a pump having a chamber (14) having a volume, an inlet and outlet to the chamber and means for varying the volume of the chamber.

Referring to claim 3, Dusevoir discloses the means for varying the volume is by relative rotation of first (10) and second (28) bodies of the pump.

Referring to claim 4, Dusevoir discloses the second body (28) is provided within the first body (10).

Referring to claim 6, Dusevoir discloses the first and second bodies (10,28) are substantially eccentric relative to one another.

Referring to claim 17, Dusevoir discloses the first body has a substantially cylindrical internal bore.

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Referring to claim 20, Dusevoir discloses the first body has a substantially cylindrical internal bore.

Referring to claim 21, Dusevoir discloses the second body has a substantially cylindrical internal bore.

8. Claims 1,3,10,34,35,58 are rejected under 35 U.S.C. 102(b) as being anticipated by Barrus et al. ('732).

Barrus et al. discloses (see Figs. 1-2) a pump (11) having a chamber having a volume, an inlet and outlet to the chamber and means (21,17) for varying the volume of the chamber.

Referring to claim 3, Barrus et al. discloses the means for varying the volume is by relative rotation of first (17) and second (21) bodies of the pump.

Referring to claim 10, Barrus et al. discloses the second body (21) comprises a rotor.

Referring to claim 34, Barrus et al. discloses a pump where the means (21) for varying the volume is driven by drive means (26).

Referring to claim 35, Barrus et al. discloses the drive means (29) include a drive shaft (67).

Referring to claim 58, Barrus et al. discloses the rotor is connected to a drive by means of a splined coupling (at 45 of element 39).

9. Claims 1,3,10,11,36,37,49, and 51-53 are rejected under 35 U.S.C. 102(b) as being anticipated by British Patent 231054 to Sussman et al.

Sussman et al. discloses (see Figs. 1-3) a pump having a chamber (140) having a volume, an inlet and outlet to the chamber and means (30,25) for varying the volume of the chamber.

Referring to claim 3, Sussman et al. discloses the means for varying the volume is by relative rotation of first (25) and second (30) bodies of the pump.

Referring to claim 10, Sussman et al. discloses the second body (30) comprises a rotor.

Referring to claim 11, Sussman et al. disclose the first body (25) comprises a stator.

Referring to claims 36 and 37, Sussman et al. discloses the rotor is provided with at least one seal or bushing made from a material selected from plastic material polyethylethylketone, metal, copper alloys and stainless steel (see page 1, lines 31-34).

Referring to claims 49, Sussman discloses pumps that are operatively connected with one another (see page 5, lines 23-25).

Referring to claim 51, Sussman discloses the pumps operate out of phase with one another (see page 5, lines 30-31).

Referring to claim 52, Sussman discloses two pumps with two chambers that are connected 90 degrees out of phase with one another (see page 5, lines 32-33).

Referring to claim 53, Sussman discloses two pumps with four chambers that are connected 90 degrees out of phase with one another (see page 5, lines 33-34).

10. Claims 1, 22, 24 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Budecker ('994).

Budecker discloses (see Fig. 4) a pump (1) having a chamber having a volume, an inlet and outlet to the chamber and means (5,3) for varying the volume of the chamber.

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Referring to claim 22, Budecker discloses the inlet includes a first one way valve (40).

Referring to claim 24, Budecker discloses the outlet includes a second one way valve (20).

Referring to claim 48, Budecker discloses a one-way valve (40) in the inlet and a one way valve (20) in the outlet.

11. Claims 61-66 and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by Schulte ('102).

Schulte discloses (see Fig. 1a and 1b) a pump (10) with a filter means (119) on the inlet and means for cleaning the filter means (see col. 12, lines 57-58).

Referring to claim 62, Schulte discloses the filter means (119) has a substantially cylindrical body.

Referring to claim 63, Schulte discloses the filter means (119) has an end plate.

Referring to claim 64, Schulte discloses the filter means (119) is a sheet form mesh material.

Referring to claim 65, Schulte discloses the means for cleaning the filter means is driven by means by with the pump is driven (see col. 12, lines 57-58).

Referring to claim 66, Schulte discloses the pump provides a chamber having a volume, an inlet and outlet and means for varying the volume (see col. 11 lines 3-col. 12, line 67).

Referring to claim 72, Schulte discloses filter means (119) made from metal.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dusevoir ('732) in view of British Patent 2310254 to Sussman et al.

Referring to claim, Dusevoir discloses the pump of claim 17 but does not disclose the second body has a substantially elliptical outer surface. Gordon teaches that a rotary pump with a rotor (see fig. 7, at 430) having a substantially elliptical outer surface is known in the art. Moreover, a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the second body disclosed by Dusevoir have a elliptical shape because it is a known shape to make rotors for rotary pumps.

Referring to claim 19, Dusevoir teaches the means for varying the volume of the chamber include at least one piston (48) support by the second body and biased by means (49) toward the first body.

14. Claims 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budecker ('994) in view of Bentley ('557).

Budecker discloses the pump of claim 22 but does not disclose a backup valve in the inlet. Bentley teaches that having a backup valves for check valves help to ensure that the flow

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will only be in one direction (see col. 5, lines 9-12). As it would be advantageous to ensure that the flow will only be in one direction it would be obvious to one of ordinary skill in the art to modify Budecker to have a backup valve as taught by Bentley.

Referring to claim 25, Budecker discloses the pump of claim 24 but does not disclose a backup valve in the outlet. Bentley teaches that having a backup valves for check valves help to ensure that the flow will only be in one direction (see col. 5, lines 9-12). As it would be advantageous to ensure that the flow will only be in one direction it would be obvious to one of ordinary skill in the art to modify Budecker to have a backup valve as taught by Bentley.

15. Claims 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over British Patent 231054 to Sussman et al. in view of Boller ('033).

Sussman discloses the pump of claim 11 but does not disclose a vent hole is provided through the stator. Boller teaches a rotary fluid handler with vent hole in the stator to maintain the stator pressure at a certain level (see col. 4, lines 40-42). As it would be advantageous to the operator of the pump to be able to maintain the pressure in the stator at a certain level it would be obvious to one skilled in the art at the time of the invention to modify the pump discloses by Sussman to have a vent hole in the stator as taught by Boller.

Referring to claim 55, Sussman discloses a bearing pack ( at element 50).

Referring to claim 56, Sussman discloses a fluid seal upstream and downstream of the bearing pack (at element 155).

Referring to claim 57, Sussman does not disclose a second vent through a bearing housing. However, vents in bearing housings are well known in order to vent out any excess

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lubrication for the bearings. As it would be advantageous to have a means to vent out the excess lubrication of the bearings, it would be obvious to one of ordinary skill in the art to further modify Sussman to have a vent in a bearing housing.

16. Claims 61 and 66-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deming ('985) in view of Schulte ('102).

Deming discloses a pump (2) with a filter means (3) but does not disclose means to clean the filter. Schulte teaches filter has a cleaning means. The cleaning means allow the filter to be cleaned without removing the pump from the well bore. As it would be advantageous to one operating a downhole pump to be able to clean the filter without removing the pump from the well bore it would be obvious to one of ordinary skill in the art to modify Deming to have a filter means with a means for cleaning as taught by Schulte.

Referring to claim 66, Deming discloses (see Figs. 1-9) a pump (2) having a chamber (21) having a volume, an inlet and outlet to the chamber and means (14,16) for varying the volume of the chamber.

Referring to claim 67, Deming discloses the means for varying the volume is by relative rotation of first (14) and second (16) bodies of the pump.

Referring to claim 68, Deming discloses the first and second bodies are a stator (14 ) and a rotor (16).

Referring to claim 69, Deming discloses the filter means (3) is rigidly attached to the rotor so as to rotate therewith.

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17. Claims 70-71 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deming ('985) in view of Schulte ('102) as applied to claim 68 above, and further in view of Bratten ('536).

Deming, as modified, discloses the pump of claim 68, but does not disclose means for cleaning is a blade, knife or scraper. Bratten teach that a scraper mounted to a stationary surface to clean the surface of a filter that rotates is well known in the art (see col. 2, lines 24-31). The Bratten reference would suggest that one of ordinary skill in the art would have known of the use of a scraper on a stationary object to clean a filter means that rotates. Therefore it would have been obvious to one of ordinary skill in the art to further modify Deming to have the means for cleaning be a scraper attached to the stator.

Referring to claim 71, Bratten teach (see Fig. 1) the scraper (18) has an edge that comes into contact with a filter means to remove debris on the filter. Bratten is silent as to whether the edge is serrated. However, a serrated edge on a scraper is well known in the art. Moreover, a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). One of ordinary skill in the art would have known of the use of a serrated edge on a scraper. Therefore it would have been obvious to one of ordinary skill in the art to further modify Deming to have the scraper have a serrated edge.

Referring to claim 73, Bratten teaches the scraper (18) is made of metal.



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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 703-306-5707. The examiner can normally be reached on 7:30-4 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on 703-308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

gmc  
August 29, 2003

  
DAVID BAGNELL  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600